

Off-farm nutrient management costs

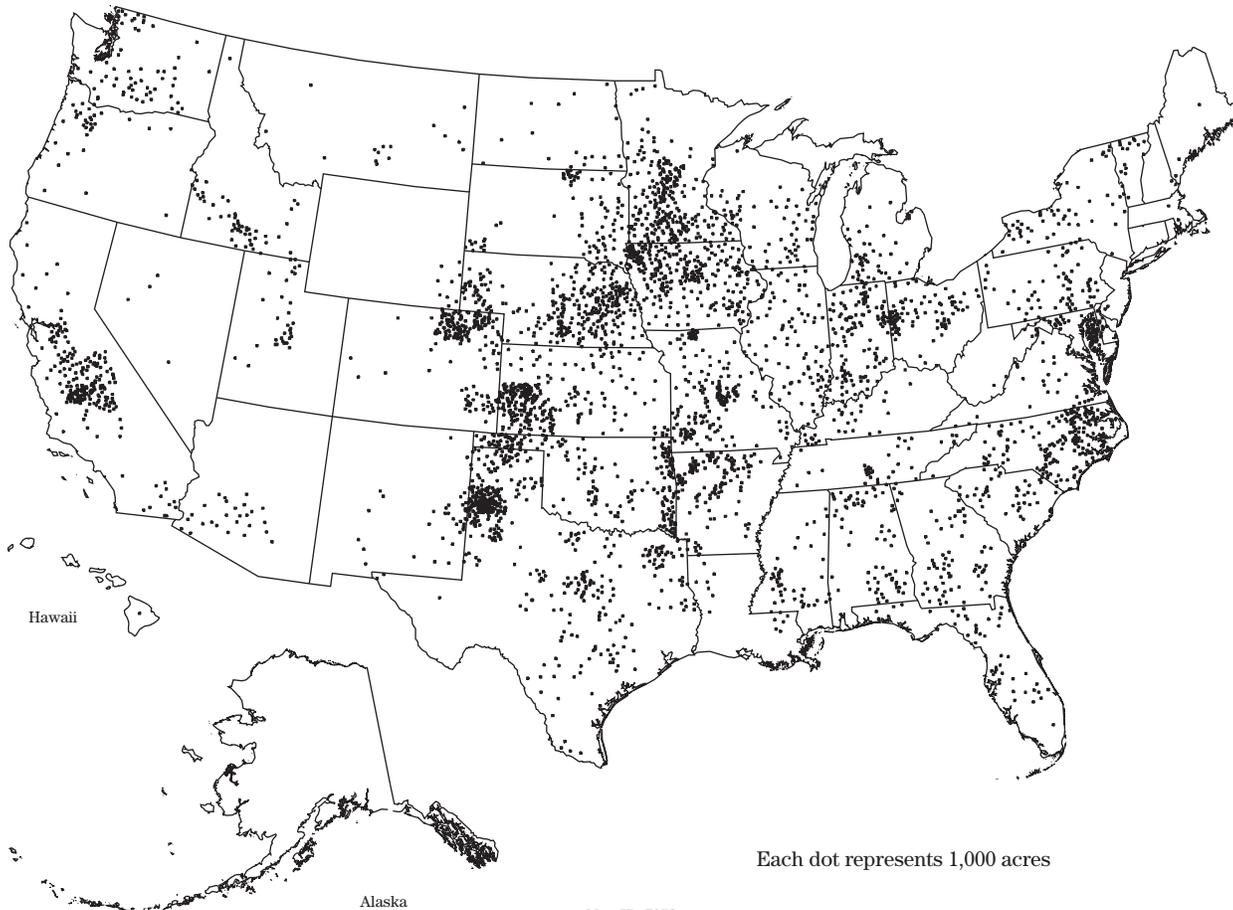
As indicated in the previous chapter and in appendix B, about half of all the recoverable manure produced after CNMPs are implemented is transported off the farm for land application on surrounding properties within the county (i.e., acres on manure receiving farms). This represents an increase of about 20 percent over the amount exported for land application within the county in the baseline scenario (appendix B, table B-13). The additional acres required for land application of this manure is about 4 million acres, shown in figure 17. It is expected that manure-receiving farms will adopt the appropriate nutrient management practices on acres with manure applied. Thus,

application rate criteria for manure receiving farms were modeled the same as for CNMP farms with enough land to meet nutrient management criteria in the after-CNMP scenario—application at nitrogen-standard rates. (See appendix B for a detailed documentation.)

Under the assumptions of this assessment, costs associated with off-farm land application of manure on these additional acres would be borne by the manure-receiving farm and not the livestock operation. Some of these costs will be offset by reductions in the cost of commercial fertilizer and benefits from enhanced soil quality. No adjustment was made for these benefits.

Costs included land application costs and soil testing costs for additional acres with manure applied. Specific manure receiving farms that had manure applied

Figure 17 Additional off-farm acres required to meet CNMP application criteria (4.0 million acres)



Costs Associated with Development and Implementation of Comprehensive Nutrient Management Plans
Part I—Nutrient Management, Land Treatment, Manure and Wastewater Handling and Storage, and Recordkeeping

were not identified. Instead, all available acres on manure-receiving farms in the county were treated as if they were all on one large farm. Land application costs and soil testing costs were estimated in the same manner and with the same per-unit costs as used to calculate onfarm land application and soil testing costs. The application costs per acre used for onfarm land application were lower for farms with larger volumes of manure. The proportion of acres in each cost category for manure-receiving farms was estimated based on the proportion of acres in each cost category among the livestock operations in the county.

Off-farm land application costs and soil testing costs are shown in table 20. Costs are expressed as a per-farm cost for CNMP farms so that estimates can readily be compared to CNMP-related costs. Averaged over all CNMP farms, the number of additional acres

with manure applied is 16 acres per farm and the average annual off-farm nutrient management cost was \$98 per farm. When averaged over only the 71,999 farms with off-farm export of manure, the number of additional acres with manure applied is 56 acres per farm and the average annual off-farm nutrient management cost was \$351 per farm. The highest cost per CNMP farm was in the Southern Plains, the Northern Plains, and the Mountain states.

The total cost over all regions was \$25.3 million. The highest total costs were for the Corn Belt region—\$4.8 million—because of the large number of farms with excess manure. The second highest total cost was for the Southern Plains—\$4.3 million. The lowest regional costs were for the Northeast (\$1.2 million), the Delta States (\$1.3 million), the Southeast (\$1.6 million), and the Appalachian region (\$1.9 million).

Table 20 Nutrient management costs for additional acres on manure receiving farms with manure applied because of CNMP implementation

Farm production region	Number of CNMP farms	Off-farm acres with manure applied, baseline scenario	Off-farm acres with manure applied, after-CNMP scenario	Additional off-farm acres with manure applied	Off-farm land application costs, baseline scenario	Off-farm land application costs, after-CNMP scenario	Off-farm land application costs	Soil testing costs	Total costs
Average annual costs per CNMP farm, projected over all CNMP farms									
Appalachian	22,899	40	52	12	235	312	77	5	82
Corn Belt	71,540	19	29	11	110	175	65	3	67
Delta States	12,352	78	93	15	450	546	96	6	102
Lake States	52,817	12	19	7	71	112	40	2	42
Mountain	7,964	81	125	44	440	699	259	4	262
Northeast	31,598	14	20	6	80	117	37	2	40
Northern Plains	26,309	33	58	25	174	317	143	3	146
Pacific	7,974	111	150	39	575	825	249	12	262
Southeast	12,807	99	116	18	567	684	117	7	124
Southern Plains	10,941	138	200	62	741	1,118	377	12	389
All regions	257,201	37	52	16	207	301	94	4	98
Average annual cost per CNMP farm, projected over CNMP farms with excess manure									
Appalachian	9,269	99	129	30	580	771	191	12	203
Corn Belt	14,738	91	143	52	535	849	314	13	327
Delta States	7,447	129	154	25	747	906	159	10	169
Lake States	7,267	89	137	48	519	811	291	14	305
Mountain	2,837	228	352	124	1,235	1,961	726	10	736
Northeast	7,816	56	81	25	323	473	150	10	160
Northern Plains	5,014	174	307	133	913	1,662	749	14	764
Pacific	4,746	186	253	66	966	1,385	419	21	440
Southeast	8,392	151	177	27	866	1,044	178	11	189
Southern Plains	4,473	337	488	152	1,814	2,736	922	29	951
All regions	71,999	132	187	56	738	1,076	337	13	351